

sects from New Zealand, which contained this and some other unrecorded species. I hasten to publish it, as the *Coccinella Tasmanii* of the above Fauna is only a variety of the Australian *C. leonina*, Fabr.

M. Mulsant gave me this description for the second and forthcoming part of the 'Fauna of New Zealand,' but I prefer publishing it at once. The name he had provisionally given it having been used by Klug for a Mexican species of the family, I have given it another name.

I may mention, that since the publication of the Fauna alluded to, I have ascertained the following to be the correct synonyms of one of the Longicorn Beetles mentioned there:—

ÆMONA VILLOSA.

Saperda villosa, Fabr.

Saperda hirta, Fabr. (olim).

Æmona humilis, Newman, Entomologist, p. 8.

Isodera villosa, White, l. c. t. 4. f. 1.

We have only received within the last week a small box of insects at the Museum from Dr. Andrew Sinclair, R.N., the Colonial Secretary, perhaps the most interesting feature of which is a rather small species of *Mantis*.—A. W.

BIBLIOGRAPHICAL NOTICES.

The History of Barbados. By Sir ROBERT H. SCHOMBURGK, Ph.D.
&c. Royal 8vo, 772. London, 1848.

THIS new proof of the indefatigable activity of its well-known author consists of a portly volume, containing a geographical and statistical description of the island, with a sketch of its history, and, what brings it more particularly within our province, an account of the geology and natural productions. This third division forms a very important feature of the book, and is much more perfect than such portions of topographical works usually are; in addition to the very interesting geological details and special natural history, we find copious lists of the organic forms, vegetable and animal, inhabiting the island, which are chiefly the fruits of the author's personal researches. These lists are prefaced by brief introductory notices which will add much to their interest in the eyes of general readers, and the author states that want of space alone prevented his adding a popular account of the plants with their uses and properties; he still looks forward to the composition of a Flora of Barbados.

In describing the general outline and aspect of the island, Sir Robert compares it in size and in some measure in outline to the Isle of Wight. "It is almost encircled by coral reefs, which in some parts, as in the parish of St. Philip, extend for nearly three miles to seaward, and prove very dangerous to the navigation. The shore

rises boldly to a height of from thirty to fifty feet on the northern point and on the south-eastern part of the parish of St. Philip, but otherwise we find long lines of sandy beaches, which are protected against the encroachments of the sea by coral reefs."

Although possessing no very elevated points, the surface is exceedingly irregular; the highest point is Mount Hillaby, 1147·55 feet. "If we choose this point as our station, we observe clearly two structures well-defined and geologically different from each other. A narrow strip runs parallel, to the west, with the coast from north to south. We may easily trace it from Bridgetown to almost the extreme end of the island, where, in the neighbourhood of Harrison's, a bold bluff point ends it, from whence the coast assumes the rugged outlines which cliffs of soft material generally present where encroached upon by the battering power of the breakers of a stormy sea. From the west or leeward coast, the ground rises in very distinct successive terraces to the central ridge. These terraces are interrupted by ravines (called gullies in the island). If we turn now to the east, an aspect of a quite different nature presents itself; we see before us a mountainous country in miniature; hills of a conical form radiate from the central ridge, and chiefly from Mount Hillaby in a north-eastern direction towards the sea-shore; their sides are rugged and worn by the heavy rains and mountain torrents, their colour being generally of a dark reddish-brown, here and there tipped with whitish marl. This district has been represented as similar to the alpine country of Scotland, which name has been adopted for it." Mount Hillaby is not exactly in the centre of the island, but rather in the middle of the northern and larger portion of the island, divided from the southern by a deep valley running from east to west; "the southern division is an imitation of the northern on a smaller scale, only that the line of its greatest length stretches from east to west, while in the northern division it extends north and south." The western aspect of Barbados presents a succession of terraces of table-land rising precipitously from one another; the south aspect is similar, but the total elevation is not so great. The north offers a considerable extent of champaign country with Mount Gilboa and Boscobelle rising suddenly from it: seen from the east the island is wild and picturesque, the cliffs rising almost abruptly from the sea to a height of nearly a thousand feet.

The Caribbee Islands form two geological groups; the one, calcareous, is external and exposed to the direct action of the Atlantic; while the other, volcanic, includes the inner islands. Barbados is the most eastern of the calcareous chain, and its aspect indicates at once its origin from the coral animals.

Our author divides the now existing rocks of Barbados into two formations, viz. the Coralline limestone and what, from its locality, he terms the "Scotland" formation. The coralline limestone includes beds of calcareous marl containing recent shells in large numbers and many species; the "Scotland" consists of strata of sandstone, siliceous and calcareous, siliceous limestone, clays, selenite, earthy marls often containing fragments of pumice, strata of volcanic

ashes, seams of bitumen and springs of petroleum (Barbados tar). The coralline limestone occupies six-sevenths of the whole area of the island, and the author considers that the terraces it presents are owing to gradual elevation with intervening periods of rest and subsequent denudation, and gives a detailed account of the present condition and probable progress of the changes it has undergone. Casts of the shells of *Turbo*, *Lucina* and *Petricola* occur at the highest elevations of the coral rock; the shells found eight hundred or a thousand feet lower still retain their lustre, but though resembling those of the adjacent seas, are usually much larger than the recent.

The "Scotland" formation presents a very different appearance and structure from the coral; the district in which it occurs is encircled by a semicircular range of heights from which long ridges of hills project, converging towards each other and diminishing in height as they approach the sea. The various modifications of tertiary rocks of this district manifest an original uniformity, but present great signs of disturbance, and the stratification varies from horizontal to vertical, or is wavy or even contorted; thus it is often difficult to ascertain the dip; the direction is generally south-west and north-east.

The earthy marl constitutes by far the greater part of this series, and it sometimes occurs stratified. It abounds in Polycystina: in the marl from Mount Hillaby Ehrenberg found 54 species, belonging to 22 genera; another specimen gave 113 species of Polycystina with 5 of Polygastrica, 1 Geolithia and 2 Phytolitharia. To the south the marl is succeeded by sandstones. The bituminous sandstones are intermixed with the more calcareous varieties. As to the age of these rocks, our author says, "the *Scalaria* which I found on the summit of Bissex Hill and the *Nucula* of Springfield, induced Prof. E. Forbes to consider the Scotland rocks as belonging to the miocene period of the tertiary strata. The mineralogical character of rocks is considered at present of little importance when conclusions respecting their age are to be formed. Still my observations on the spot, combined with the mineralogical character of the rocks, lead me to coincide in Prof. Forbes's opinion. The chalks of Caltanissetta, on which Prof. Ehrenberg rests his opinion that the Scotland formation in Barbados belongs to an older period than the miocene group, have been considered by different geologists as belonging to different periods; by some they have been regarded as secondary, by others as tertiary rocks."

The whole Scotland district is apparently an old sea-bottom, and the author attributes its present disturbed condition to volcanic agency acting from given points and thus giving rise to local derangements. The presence of pumice and strata of volcanic ashes render this less doubtful. Isolated rocks of the coral formation are found lying on the summits and declivities of hills in the Scotland district; these Sir Robert is inclined to regard as fragments detached from the cliffs which now border the district (and which, with the exception of Mount Hillaby, all exceed in height the "Scotland" hills), before the upheaval of the sea-bottom.

A description of the fossils follows this chapter, containing an

illustrated account of the Polycystina, also a new *Scalaria*, *Ehrenbergi*, and two *Nucula*, *Parkeri* and *Schomburgki*, described by Prof. E. Forbes.

The botanical portion, prefaced by a few general introductory remarks, contains a list of the Barbados plants; to the scientific names are added the vernacular names by which they are known in this island, and frequently the French or other foreign names used in the adjacent colonies. It contains all the species indigenous, naturalized or cultivated, the two latter being distinguished by the addition of the name of their native country. Next follow alphabetical arrangements of the vernacular names, one English and another foreign, which referring by numbers to the scientific lists will be useful to local botanical students, and are not without importance to us at a distance. A single new species, a lichen, *Endocarpon flavidum*, Taylor, is described. In the zoology the different classes are treated *seriatim*; after an account of the zoophytes, we come, under the head of Insecta, to some interesting details concerning the Sugar Ant (*Formica omnivora*, L., *Myrmica omnivora*, Latr.), whose ravages have often so fearfully interfered with human industry. They showed themselves first in 1760 in Barbados, and our author states, on the authority of Dr. Coke, that "it was deliberated whether that island, formerly so flourishing, should not be deserted" on account of the dreadful devastation they caused. It appears that these ants do not actually feed on any part of the sugar-canes or the leaves of trees, but make their nests under the roots, which protect them from heavy rains, and, being firmly fixed in the ground, place them in security against the agitation of the usual winds. The *stool* of the sugar-canes is firmly attached to the earth, and almost impenetrable to rain; the trees of the orange tribe afford similar advantages to the insects, while the coffee, cacao, plantains, &c. are not molested. The ants apparently live entirely on animal food, and not only attack dead substances, but living bodies; thus small animals and poultry perish when not assisted, and it becomes necessary to guard the eyes of cattle by a circle of tar, to prevent them from being blinded. The destruction of these creatures was attempted with poison and fire during the "plague" following 1760, but all attempts proved ineffectual till the hurricane of 1780, before the violence of which the Sugar Ant disappeared. In 1814 they again made their appearance and caused considerable injury, but soon disappeared. They are still to be found in Barbados, but only in small numbers. The Great-headed Ant or Cushi, *Formica cephalotes*, Fabr., is equally destructive, attacking the leaves of trees and of vegetables, such as the sweet potato, cassada, &c. The White or Wood Ant (*Termes devastans*, Kollar) is another of the plagues of Barbados.

Among the enemies of the sugar-cane are enumerated the Borer or Yellow Blast, the grub of one of the Pyralidæ, *Diatræa sacchari*, Guilding, which burrows into and feeds upon the interior of the stems; the Grougrou Worm, the larva of *Calandra palmarum*, Fabr. (which is eaten by some of the creoles and considered a great delicacy); and *Calandra sacchari*, Guilding, the Large Borer. Since the hurricane of

1831 an homopterous insect has shown itself, and multiplying rapidly has committed great ravages; this is *Delphax saccharivora*, Westwood. Two other insects, apparently belonging to the Aphididæ and Coccidæ, have more recently been highly injurious to the sugar-canes, and others of this class equally infest other plants. The cocoa-nuts are so attacked by an *Aleyrodes*, that when the author quitted Barbados there was not a single healthy tree left.

The list of Crustacea is compiled by Mr. Adam White. Sir Robert Schomburgk believes that, if thoroughly examined, the islands and seas of the West Indian Archipelago would yield probably four times as many species as are at present known, and states that although the marine fauna of these islands is still insufficiently known to enable us to deduce results as to the distribution of the Crustacea, it is Mr. White's opinion that many of the species discovered by Jay and his correspondents on the south shores of the United States will eventually be found in the West Indian Archipelago.

The number of Mollusca found in the neighbourhood of Barbados is by no means large, and the author having been disappointed of a list, gives a catalogue of those found both in Barbados and the West Indies in general.

The Fishes, determined by Profs. Müller and Troschel, include a number of new species and one new genus, *Caprophonus*, Müll. et Trosch., belonging to the family Scomberoidæ. The Reptilia are sparingly represented in Barbados: the *Iguana tuberculata*, the largest of the Saurians, is now very scarce. Only one snake has been found, and the sight of a specimen is a rare occurrence; it is perfectly harmless, and from the description given to the author, probably a *Tortrix*.

The number of indigenous birds does not amount to fifteen, and there are about forty species recorded as birds of passage, or only occasionally seen on the island. The absence of woods and umbrageous trees is doubtless the cause of this paucity. A British bird, the Ruff Sandpiper, *Philomarchus pugnax*, L., is recorded for the first time as occurring on the other side of the Atlantic. It was sent to the author among other migratory birds, but the communicator, Mr. Bishop, observed that its name was not known; thence it may be inferred that its occurrence in Barbados is a rare circumstance. Our space does not admit of more than this hasty glance over the contents of this book, but we hope that it will be sufficient to convince our readers of the interest attaching to it, and induce them to become acquainted with the details by a perusal of the work itself.—A. H.

Zoological Recreations. By W. J. BRODERIP, Esq., F.R.S.

A pleasant book on a delightful subject with a pleasing title. This work, which we should have noticed before, consists of a series of papers written by one of our most talented lawyers for the pages of the New Monthly Magazine, from which their author, urged by Professor Owen and other scientific friends, has reprinted them. He has done well in collecting these papers, for he has given us another book belonging to a class far too rare, in which White of Selborne, Knapp,